

23. ON A SMALL COLLECTION OF AMPHIBIANS FROM GOA

(With a colour plate and a text-figure)

To consider the northward extension of additional forms of the Indo-Malayan fauna from the south-west, HA had for many years wanted to visit Goa and the surrounding areas at the break of the monsoon when the amphibians and their tadpoles would be active and viable.

Dr. (Mrs.) Maria Jose Barboza, a regular bird-watcher at the Borivli Park, offered to help with some contacts there and a short trip was made in June, 1986. We flew to Dabolim in Goa, on 21st June, 1986 when we were taken to the Circuit House at Panjim, to meet AGS who had arrived by road earlier.

The next morning we were all driven down to the Bondla Sanctuary which encloses a large zoo, and spent the day there, driving eastward to Valpoi on the following day. That afternoon and evening we made some collections in the forest adjoining Kodol and walked to southern in the foothills.

Notes on the amphibians collected are listed hereunder:

1. **Bufo melanostictus** Schneider, 1799. Indian Toad.

1 ♀ Valpoi forest.

The toad was crossing a muddy forest road after a heavy shower, and its reddish brown colour blended with that of the road.

2. **Microhyla ornata** (Dumeril and Bibron, 1841). Ornate Microhylid.

2 ♂♂ Bondla.

This Microhylid was heard calling about 1815 hrs. from inside a pile of stones at the base of a tree. They were not visible. The call can be syllabilised as *trrk—trrk—trrk* and, though startlingly loud for an animal of this size, it was also ventriloquistic and made the

location of the small frog sitting in the midst of grass or among stones extremely difficult to locate.

3. **Ramanella montana** (Jerdon, 1854). Jerdon's Ramanella.

9 (8 ♂♂, 1 ♀) Bondla.

Testes enlarged c. 4.3×2.2 . Female with mature ova.

Heard calling in the afternoon at 1215 hrs from a ditch with some rainwater. They were calling when afloat with their snouts against the wall. The call which can be syllabilised as *brong...brong...brong* was heard in both rainy and cloudy weather. The species is very wary.

4. **Nyctibatrachus humayuni** Bhaduri and Kripalani, 1955. Humayun's Wrinkled Frog.

1 ♀ from Valpoi forest.

Ovary with mature pigmented ova. Collected from the base of a tree in open forest at about 9.30 p.m. after a heavy shower, about 15 yards from a flowing stream. The specimen differs from *N. major* in having fully webbed toes and with the disks on the fingers and toes very much larger and provided with a circum-marginal groove.

5. **Rana cyanophlyctis** Schneider, 1799. Indian Skipper Frog

6 (2 Bondla and 4 Valpoi)

1 ♂ 5 ♀♀ (1 adult, 4 subadults).

Bondla specimens were collected from a tank and from a rainwater pool at Valpoi.

6. **Rana limnocharis** Boie, 1835. Indian Cricket Frog.

3 Bondla (2 ♂♂, 1 adult ♀)

Testes 1.9×1.4 mm. and 2×1.5 mm. Female with pigmented eggs. The frogs were



Malabar Flying Frog (*Rhacophorus malabaricus*) — The flying (gliding) frog.

collected near a muddy rain pool in the evening and kept in a bottle. An attempt to mate was made by a male even in this circumscribed condition.

7. **Tomopterna breviceps** (Schneider, 1799).
Indian Burrowing Frog.

Syn. *Rana breviceps*.

1 ♂ Bondla.

Testes 5.5×2.5 mm right, 6×2.75 mm left.

Dead specimen collected from a tank at Bondla Sanctuary.

8. **Tomopterna rufescens** (Jerdon, 1854).
Rufescent Burrowing Frog.

Syn. *Rana rufescens*.

6 specimens. Two (2 ♂) Bondla and four (1 ♂, 3 ♀) Valpoi.

9. **Philautus leucorhinus** (Lichtenstein and Martens, 1856)

5 ♂♂ Valpoi forest.

Testes around 2.6×1.6 mm.

The frogs were collected in the forest at 2030 hrs after a heavy shower and were located by their call which may be syllabilised as *treek...treek...treek* — with a gap of 4-6 seconds between them. They were sitting on tips of branches and in the forks of small trees. The single vocal sac, when calling, looked like a transparent bubble.

10. **Polypedates maculatus** (Gray, 1834).
Common Tree Frog.

Syn. *Rhacophorus maculatus*.

1 ♂ Testes 5×3 mm.

Calling from a bush in the late evening. The call can be syllabilised as *tak...tak...tak...tak...*

11. **Rhacophorus malabaricus** Jerdon, 1879.
Malabar Gliding Frog.

1 adult ♂ from Valpoi.

Testes 15×5 mm. The body was bright green and the tips of the toes and fingers yellow, with the webs between them red.

This is an extension of the known range of the species, as it has only been recorded as far north as Coorg in Karnataka.

While returning to camp in the dark it started to rain heavily and our attention was drawn to a loud and crackling *truk-truk-truk* from the forest some distance from the path. When followed up with torches we found some 30+ *Rhacophorus malabaricus*, either seated singly and calling, or *in copula* on leaves or branches overhanging 5'-15', above the surface of a pool of rainwater about 30' across. The amplexus is axillary. When disturbed, they jumped on to other branches at a lower level. The green of the frogs offset by the bright red of the broad webs between the fingers and the toes which were spread out when jumping/gliding was very impressive. With the five live specimens in Bombay we thought we would look at the process in greater detail. One was taken up the flight of stairs at Hornbill House and dropped off the railings vertically $23\frac{1}{2}$ feet from the ground floor. Several persons were watching and there were loud expressions of wonder and surprise as the animal seemed to have expanded and glided down at a slight angle rather than fall. When about 2 feet from the bottom and 28 feet from the point of starting it suddenly turned upwards and having gained another foot or so, at about 4' off the ground it landed against a vertical surface. This was repeated several times with very similar results, the animal never landing flat on the ground, and invariably turning upward when two or three feet off the floor and landing on a vertical surface (Fig. 1), once against a spectator's middle, after completing a journey of about 33' in all through the air.¹

¹ M.O.P. Ayyangar (1915. Records of the Indian Museum: xi, pp. 140/142) refers to a slanting glide from a tree over a distance of 30 yards and also states that a whir was heard.